



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------|-------------|-----------------------|---------------------|------------------|
| 09/652,194 | 08/31/2000 | Daniel A. Steigerwald | LML-187/704 | 2649 |
| 32566 | 7590 | 12/03/2003 | EXAMINER | |
| PATENT LAW GROUP LLP | | | CRANE, SARA W | |
| 2635 NORTH FIRST STREET | | | ART UNIT | |
| SUITE 223 | | | PAPER NUMBER | |
| SAN JOSE, CA 95134 | | | 2811 | |

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|--------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/652,194 | STEIGERWALD ET AL. | |
| | Examiner | Art Unit | |
| | Sara W. Crane | 2811 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8 September 2003 (RCE filing).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11,13,15,17-19,21,23-25,27-29 and 32-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11,13,15,17-19,21,23-25,27 and 29 is/are allowed.
- 6) ☒ Claim(s) 28,32-35 and 38-43 is/are rejected.
- 7) ☒ Claim(s) 36 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14. 6) ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

Claims 1-11, 13, 15, 17-19, 21, 23-25, 27, and 29 are allowed.

Claims 36-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 28, 32-35, and 38-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondoh et al.

Each of the structural elements recited in the rejected claims is taught with respect to the cover figure of the Kondoh reference. See the Office action of 30 August 2002. With respect to the layer designated by the independent claims as "a migration barrier," this can be read on the double layer 102, 103 in the Kondoh cover figure. Because layer 103 is Au (column 4, lines 45-48), the double layer 102, 103 comprises Au. The Kondoh layer structure 102, 103 will inherently prevent migration of silver from electrode 101 onto the surface of semiconductor layer 5, because the materials and biasing are the same as taught with respect to Applicant's device. The analysis based on inherency shows anticipation, and anticipation is the epitome of obviousness. Alternatively, it would have been obvious to one of ordinary skill in the art that the

Art Unit: 2811

Kondoh layers would prevent migration, because of the layer geometry and thickness. Also, the claim term "a migration barrier" could be read on the Kondoh layer 103 alone. If Applicant's Au serves has migration barrier properties, then the Kondoh Au would also, because the metal is the same, and so must have the same properties.

With respect to the amendment to claim 32, the Kondoh layers 7 and 102, 103 are both on the "same side of the structure" because they are both on the top side.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (703) 308-4894.

The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist, whose telephone number is (703) 308-0956.



Sara W. Crane
Primary Examiner
Art Unit 2811